

**CLAIMS**

What is claimed is:

1. A method comprising:  
detecting a wireless device within communication range of a host device;  
authenticating the detected device according to requested device identification information of the detected wireless device;  
when the detected device fails authentication, requesting audio authentication initialization information from the detected device; and  
authenticating the detected device based on the requested audio authentication initialization information.
2. The method of claim 1, wherein prior to detecting the wireless device, the method further comprises:  
receiving an audio device authentication set-up request from a user of a wireless device;  
requesting audio device identification information for the detected device; and  
storing the received audio device identification information as an authentication initialization token for the detected wireless device.
3. The method of claim 2, further comprising:  
storing the authentication initialization token within the detected wireless device.
4. The method of claim 2, wherein storing further comprises:  
compressing the received audio device identification information; and  
generating a hash value of the compressed audio device identification information to form the authentication initialization token of the wireless device.
5. The method of claim 1, wherein detecting the wireless device further comprises:  
polling a surrounding area of the host device for audio sources within a pre-determined distance of the host device; and  
when an audio source is detected, initiating an authentication handshake with an audio source device of the detected audio source.

6. The method of claim 1, wherein authenticating the detected device according to requested device identification information further comprises:

- requesting the device identification information from the detected wireless device;
- comparing the requested device identification information with stored device authentication information within the host device;
- when matching device authentication information is found, establishing an audio link with the detected wireless device; and
- otherwise, initiating a request for audio authentication initialization information of the detected wireless device.

7. The method of claim 1, wherein authenticating the detected device based on the requested audio authentication information further comprises:

- receiving audio device identification information as the requested audio authentication information;
- compressing the received audio device identification information;
- generating a hash value of the compressed audio device identification information to form a requested device authentication initialization token;
- comparing the requested device authentication initialization token to one or more stored device authentication tokens; and
- when a matching stored authentication token is detected, storing the requested device identification information of the detected wireless device as a device authentication token.

8. The method of claim 1, wherein authenticating the detected device based on the requested audio authentication information further comprises:

- receiving an audio authentication token as the requested audio authentication information of the detected wireless device;
- comparing the received audio authentication token to one or more stored audio authentication tokens;
- when a matching stored audio authentication token is detected, establishing an audio link with the detected wireless device; and
- storing the requested device identification information as a device authentication token of the detected wireless device.

9. The method of claim 8, further comprising:  
otherwise, requesting manual authorization from a user of the host device to authenticate the detected wireless device;  
when the user provides manual authentication authorization, storing the requested device identification information as a device authentication token of the detected wireless device; and  
establishing an audio link between the detected wireless device and the host device.

10. The method of claim 1, wherein authenticating the device according to requested device identification information further comprises:  
requesting the device identification information from the detected wireless device;  
and  
receiving one of an authentication key and a device identification code and a device personal identification number from the detected wireless device as the requested device identification information.

11. A computer readable storage medium including program instructions that direct a computer to function in a specified manner when executed by a processor, the program instructions comprising:  
detecting a wireless device within communication range of a host device;  
authenticating the detected device according to requested device identification information of the detected wireless device;  
when the detected device fails authentication, requesting audio authentication initialization information from the detected device; and  
authenticating the detected device based on the requested audio authentication initialization information.

12. The computer readable storage medium of claim 11, wherein prior to detecting the wireless device, the method further comprises:  
receiving an audio device authentication set-up request from a user of a wireless device;  
requesting audio device identification information for the detected device; and  
storing the received audio device identification information as an authentication initialization token for the detected wireless device.

13. The computer readable storage medium of claim 12, further comprising:  
storing the authentication initialization token within the detected wireless device.

14. The computer readable storage medium of claim 12, wherein storing further comprises:

- compressing the received audio device identification information; and
- generating a hash value of the compressed audio device identification information to form the authentication initialization token of the wireless device.

15. The computer readable storage medium of claim 11, wherein detecting the wireless device further comprises:

- polling a surrounding area of the host device for audio sources within a pre-determined distance of the host device; and

- when an audio source is detected, initiating an authentication handshake with an audio source device of the detected audio source.

16. The computer readable storage medium of claim 11, wherein authenticating the detected device according to the requested device identification information further comprises:

- requesting the device identification information from the detected wireless device;
- comparing the requested device identification information with stored device authentication information within the host device;

- when matching device identification information is found, establishing an audio link with the detected wireless device; and

- otherwise, initiating a request for audio authentication initialization information of the detected wireless device.

17. The computer readable storage medium of claim 11, wherein authenticating the detected device based on the requested audio authentication information further comprises:

- receiving an audio device identification information as the requested audio identification information;

- compressing the received audio identification information;

- generating a hash value of the compressed audio device identification information to form a requested device authentication initialization token;

- comparing the requested device authentication initialization token to one or more stored device authentication initialization tokens; and

- when a matching device authentication initialization token is detected, storing the requested device identification information as a device authentication token of the detected wireless device.

18. The computer readable storage medium of claim 11, wherein authenticating the detected device based on the requested audio authentication information further comprises:

- receiving an audio authentication token as the requested audio identification information of the detected wireless device;
- comparing the received audio authentication token to one or more stored audio authentication tokens;
- when a matching stored audio authentication token is detected, establishing an audio link with the detected wireless device; and
- storing the requested device identification information as a device authentication token of the detected wireless devices.

19. The computer readable storage medium of claim 18, further comprising: otherwise, requesting manual authorization from a user of the host device to authenticate the detected wireless device;

- when the user provides manual authentication authorization, storing the requested device identification information of the detected wireless device; and
- establishing an audio link between the detected wireless device and the host device.

20. The computer readable storage medium of claim 11, wherein authenticating the device according to requested device identification information further comprises:

- requesting the device identification information from the detected wireless device; and
- receiving one of an authentication device key and a device identification code and a device personal identification number from the detected wireless device as the requested identification information.

21. A method comprising:

- receiving, by a wireless device, a communications connection request from a host device;

- when a request for audio authentication initialization information is received from the host device, providing audio authentication initialization information to the host device; and

- once the audio authentication initialization information is authenticated by the host device, establishing an audio link between the wireless device and the host device.

22. The method of claim 21, wherein receiving the communications connection request further comprises:

- receiving a request for device identification information of the wireless device;
- providing the requested device identification information to the host device; and
- when the requested device identification information of the wireless device is not authenticated by the host device, receiving a request for audio authentication initialization information of the detected wireless device.

23. The method of claim 22 wherein providing audio authentication initialization information to the host device further comprises:

- requesting audio authentication initialization information from a user of the wireless device;

- receiving audio device identification information from the user as the authentication initialization information; and

- providing the audio device identification information to the host device as the requested audio authentication initialization information.

24. The method of claim 22, further comprising:

- selecting a stored audio authentication initialization token; and

- transmitting the audio authentication initialization token to the host device.

25. The method of claim 21, wherein prior to receiving the connection request, the method further comprises:

- receiving a device authentication set-up request from a user of the wireless device;

- requesting, from the user, audio device identification information as audio authentication initialization information of the wireless device; and

- once the audio device identification information is received from the user, storing the voice audio device identification information as an audio authentication initialization token of the wireless device.

26. A computer readable storage medium including program instructions that direct a computer to function in a specified manner when executed by a processor, the program instructions comprising:

receiving, by a wireless device, a connection request from a host device;  
when a request for audio authentication initialization information is received from the host device, providing audio authentication initialization information to the host device;  
and

once the audio authentication initialization information is authenticated by the host device, establishing an audio link between the wireless device and the host device.

27. The computer readable storage medium of claim 26, wherein receiving the communications connection request further comprises:

receiving a request for device identification information of the wireless device;  
providing the requested device identification to the host device; and  
when the requested authentication information of the wireless device; is not authenticated by the host device, receiving a request for audio authentication initialization information of the detected wireless device.

28. The computer readable storage medium of claim 26, wherein providing audio authentication initialization information to the host device further comprises:

requesting audio authentication initialization information from a user of the wireless device;

receiving audio device identification information from the user as the authentication initialization information of the detected wireless device; and

providing the audio device identification information to the host device as the requested audio authentication initialization information.

29. The computer readable storage medium of claim 27, further comprising:

selecting a stored audio authentication initialization token; and

transmitting the audio authentication initialization token to the host device.

30. The computer readable storage medium of claim 26, wherein prior to receiving the connection request, the method further comprises:

- receiving a device initialization request from a user of the wireless device;
- requesting, from the user, audio device identification information as audio authentication initialization identification information of the wireless device; and
- once the audio device identification information of the wireless device is received, storing the audio device identification information as an authentication initialization token of the wireless device.

31. An apparatus, comprising:

- an authentication unit to authenticate wireless devices detected within communications range of the apparatus using audio authentication initialization information of the detected wireless device;
- a communications interface coupled to the authentication unit, the communications interface to establish audio links with authenticated wireless devices, request device identification information as well as audio device authentication initialization information from detected wireless devices; and
- a storage device coupled to the authentication unit, containing an audio authentication initialization token as well as an authentication key for each wireless device initialized by the apparatus.

32. The apparatus of claim 31, further comprising:

- a device initialization unit to request audio device identification information in response to a device authentication set-up request from a user of a wireless device and store the received audio device identification information as an authentication initialization token of the wireless device.

33. The apparatus of claim 31, wherein the authentication unit compares a received audio authentication initialization token to one or more stored audio authentication initialization tokens, establishes an audio link with a detected wireless device when a matching stored audio authentication initialization token is detected, and stores requested device identification information of the detected wireless device as an authentication key.



34. A system comprising:  
a host device; and  
one or more wireless devices, each wireless device including:  
a processor having circuitry to execute instruction; and  
a storage device having a sequence of instructions stored therein, which  
when executed by the processor causes the processor to:  
request an audio authentication initialization information from a user of the  
wireless device in response to an audio authentication initialization request from the host  
device;  
receive an audio device identification from the user; and  
provide an audio device identification to the host device as the requested  
audio authentication initialization information.

35. The system of claim 34, wherein the host device further comprises:  
an authentication unit to authenticate wireless devices detected within  
communications range of the host device using audio authentication information of the  
detected wireless devices;  
a communications interface coupled to the authentication unit, the communications  
interface to establish audio links with authenticated wireless devices, request device  
identification information as well as audio authentication initialization information from  
detected wireless devices; and  
a storage device coupled to the authenticating unit, containing an audio  
authentication initialization tokens as well as device identification information for each  
wireless device initialized by the host device.

36. The system of claim 34, wherein the host device further comprises:  
a device initialization unit to request an audio device identification in response to a  
device authentication set-up request from a user of a wireless device and store received  
audio device identification information as an authentication initialization token for the  
wireless device.